MANAGEMENT CONSULTANTS
TO THE CONSTRUCTION INDUSTRY

Present

2003 Preliminary Owner Survey Results

August 13, 2003

FMI is pleased to be working with the CMAA Foundation (CMAA) on the *Fourth Annual Owner Survey*. The goal for this survey is to provide a voice for construction owners to improve design and construction industry practices.

This year's survey includes questions eliciting input following the work of participants in a special owner session at the spring 2003 CMAA Leadership Conference. The results of this survey will be the most significant to date. This year's survey also includes questions from the Construction Users Round Table (CURT) focusing on the design process. We are pleased to have CURT and its members participating in this important work.

The Mission of the CMAA Foundation is to provide opportunities and support through education and research endeavors to advance knowledge in the management of the construction process. For more information about CMAA, visit their web site at www.cmaanet.org.

FMI is the only national management-consulting firm focused exclusively on the construction industry. We have 50 years of experience advising industry leaders on key strategies to improve their capital program delivery process. For more information about FMI, please visit our web site at www.fminet.com.

On the pages that follow, the results are broken into the following sections:

I. Participant Profile
II. Questions Related to Phases of Construction
III. Questions on Results of CMAA Leadership Conference Owner Session
IV. Questions Related to the Design Process Specifically in Cooperation with Construction Users Roundtable Committee on A/E Productivity
V. Other Items

FMI will furnish the results of the survey to those who request copies once the final report is completed.

I. Participant Profile

1. Which of the following best describes your organization?	2003 Preliminary Results	2002 Preliminary Results
Private	37%	38%
Quasi-public	6%	16%
Municipal	22%	14%
State	20%	17%
Federal	15%	15%

2. In what market segment(s) does your organization complete projects involving the construction, maintenance, and/or operations of facilities? Please select all that apply.	2003 Preliminary Results	2002 Preliminary Results
Environment	32%	30%
General Building	66%	76%
Industrial	14%	13%
Manufacturing	12%	18%
Power	25%	16%
Telecommunications	16%	10%
Transportation	28%	26%
Water/Waste Water	27%	18%
Other, Please Specify	32%	N/A

II. Questions Related to Phases of Construction

3. Please select four (4) statements below that you feel describe the most significant challenges and opportunities associated with the predesign phase of the construction process.	2003 Preliminary Results	2002 Preliminary Results
The lack of due diligence on existing physical plants by engineers.	47%	56%
Business goals and specific project goals not aligned (use of pre-project planning).	70%	83%
A lack of familiarity and learning to use life cycle costing.	47%	44%
The need for high-level support for the proper funding of predesign activities.	77%	75%
The need to spend more time in predesign 'Most important phase next to construction.'	95%	89%
Not using the available technology to assist in the design phase.	43%	31%

4. Please select four (4) statements below that you feel describe the most significant challenges and opportunities associated with the design phase of the construction process.	2003 Preliminary Results	2002 Preliminary Results
Review of the technical design details.	56%	64%
Engineers not looking at the operating costs.	34%	38%
Decrease in the competency levels of the designers.	39%	36%
Fewer people entering the industry (a need for mentors) need more experienced personnel.	31%	22%
Quality Reviews from A/Es.	72%	64%
A lack of coordination/collaboration among team members.	84%	83%
A lack of site investigation giving rise to the increased differing conditions.	49%	53%
A lack of code compliance and awareness.	18%	23%
Variation of codes from state to state.	5%	13%

5. Please select four (4) statements below that you feel describe the most significant challenges and opportunities associated with the procurement phase of the construction process.	2003 Preliminary Results	2002 Preliminary Results
Prequalification of the bidders.	87%	78%
Past performance data not provided on the finished projects.	80%	70%
Evaluations based on the contractor/consultant information.	74%	54%
Expand the use of “One Source” contracts for major equipment.	34%	32%
The use of incentive and disincentive clauses in contracts for increased performance and quality in the final projects delivered.	75%	79%

6. Please select four (4) statements below that you feel describe the most significant challenges and opportunities associated with the construction phase of the construction process.	2003 Preliminary Results	2002 Preliminary Results
A guarantee for quality, what it costs and when it will open.	45%	45%
Identify and guarantee the best key personnel.	32%	26%
Getting the right team and people.	52%	48%
Team, people, and performance.	56%	64%
Availability of the laborer's impact on construction.	12%	20%
Use of a CM to provide strong active leadership of the construction process.	33%	35%
Bring a CM into the process at the same time or before the architect.	43%	31%
Communication problems/problems with technology.	34%	29%
Use of milestones to manage the contract.	23%	28%
Reduce the owner directed changes.	42%	35%
Promote innovation at the project site.	30%	22%

7. Please select four (4) statements below that you feel describe the most significant challenges and opportunities associated with the post-construction phase of the construction process.	2003 Preliminary Results	2002 Preliminary Results
Start-up/turnover process (commissioning).	84%	71%
HVAC commissioning.	30%	20%
Whole facility testing procedures.	40%	48%
Emergency testing procedures.	8%	74%
Identifying the "Critical" systems.	12%	22%
Post occupancy evaluations (Lessons learned collection and database storage).	48%	44%
As-Built' drawings for operations.	71%	62%
CAD documentation.	17%	20%
Database for programming replacement needs (Facilities Management).	23%	15%
An accurate inventory of components upon completion.	15%	10%
Include warranties.	9%	14%
The use of A/Es to provide 'As-Builts.'	14%	16%
Process responsibility for latent defects (time period).	27%	37%

III. Questions on Results of CMAA Leadership Conference Owner Session

8. Please rate each of the following items related to quality in construction on a scale of 1 to 5 with 1 being 'insignificant' and 5 being 'critically important.'					
	1 Insig-nificant	2	3	4	5 Critically Important
Develop a concise and comprehensive procedures manual early on to guide the construction process.	0%	11%	28%	38%	24%
A defined statement of work and owner's vision that help align contractors to owner's goals and acknowledgement that these goals are mutually understood.	0%	3%	15%	41%	41%
In order to better control the construction phase, the owner must include the CM professional from the predesign phase.	2%	12%	16%	43%	27%
Develop a periodic review to assess the progress of 'As-Built' documents.	1%	8%	37%	38%	15%
CMAA to prepare a qualifications-based interview process for owners.	9%	15%	38%	31%	8%
CM's to prepare a project schedule during design with milestones approved and signed-off for executive commitment.	1%	9%	15%	49%	26%
Accountability through commitment (Sign-off).	0%	0%	19%	40%	42%

9. Please select four (4) statements below that you feel describe the most significant challenges and opportunities as they relate to contract completion and project close-out.	2003 Preliminary Results
Getting all of the right people together at the early phase of a project and throughout Partnering. Tenant/end-user—very important.	45%
Begin the close-out process at the beginning of the project.	43%
Develop a process for end-user input throughout all phases of the design and construction process ('Shepherds').	42%
Include well-defined project close-outs	51%
Develop alternate strategies for close-out when things go wrong (Back-up plan).	19%
Adopt a proactive approach to the issue resolution process.	59%
Add incentives to the close-out process.	15%
Increase active participation by sub-vendors.	15%
Incorporate close-out items in the project schedule and schedule of values.	62%
Establish performance measurements for the close-out process.	47%

10. Please rate each of the following items related to warranty issues and open ended liability on a scale of 1 to 5 with 1 being 'insignificant' and 5 being 'critically important.'					
	1 Insig-nificant	2	3	4	5 Critically Important
Owners must have a better understanding of risks.	0%	7%	23%	40%	31%
Start talking about risks and warranties during the predesign stage with owners.	1%	4%	29%	51%	15%
CMAA should take the lead in educating owners and other stakeholders regarding risk management.	3%	12%	33%	42%	10%
Collaborate with the owner up front	1%	3%	18%	48%	30%
CM has a responsibility to clearly educate all stakeholders of expectations.	1%	5%	25%	45%	23%
Minimize the trauma of the moving expectation targets.	1%	7%	34%	42%	16%
Continually communicate expectations.	1%	1%	8%	39%	51%
Changing expectations must be managed by the CM.	3%	1%	23%	50%	22%
CM should lead the industry in the outreach process.	3%	7%	40%	38%	12%
It is important to glean everyone's perceptions of the project well in advance of design and construction.	1%	3%	15%	43%	37%
Communications protocol breaks down in the warranty stage.	2%	8%	33%	42%	14%
CM's role enters a new phase at the end of a project.	7%	8%	33%	42%	11%
CMAA should further its education of the commissioning/activation phase.	2%	3%	26%	48%	21%

VI. Questions Related to the Design Process Specifically in Cooperation with Construction Users Roundtable (CURT) Committee on A/E Productivity

11. There are a variety of factors that contribute to what you as an owner may define as successful completion of the design and construction of projects for your organization. Please rate each of the following factors. On a scale from 1 to 5 with 1 being 'insignificant' and 5 being 'critically important.'					
	1 Insig-nificant	2	3	4	5 Critically Important
Possible statements to rate.	11%	14%	60%	15%	0%
Compliance with original schedule.	0%	1%	7%	49%	43%
Compliance with original construction budget.	0%	1%	4%	24%	71%
Facility conforms to original goals and objectives (or building program).	0%	0%	5%	41%	53%
Minimal or no change orders.	1%	12%	36%	40%	11%
Minimal or no RFI'S.	10%	20%	41%	25%	4%
No construction claims.	2%	3%	9%	37%	48%
Minimize design fees.	7%	18%	36%	31%	9%
Minimize construction cost.	1%	9%	33%	41%	16%
Minimize long term facility operating costs.	1%	1%	6%	52%	40%
Minimize cost to the environment through sustainable (green) design strategies.	2%	5%	42%	37%	13%
Enhance/support organization's brand image.	1%	10%	34%	40%	15%
Eliminate conflicts within design and construction teams.	1%	2%	8%	50%	39%
Support open communication amongst the design and construction team.	0%	0%	5%	26%	68%
Provide accurate information for the long term operation of the facility.	0%	1%	9%	46%	44%
Long term facilities management support in the construction documents.	0%	3%	25%	48%	24%
Award-winning design.	14%	23%	36%	22%	5%
Timely response to inquiries.	0%	1%	7%	31%	62%

12. There exists a widely held view that the quality of design and construction documents has declined. Please select the four (4) statements that, in your opinion and experience, are the most significant reasons for this decline.	2003 Preliminary Results
Use of CAD technology by the design team.	11%
Lack of clear construction documentation standards.	20%
Inconsistent interpretations by building and regulatory agencies.	14%
Regulatory and building code variances between different jurisdictions.	5%
Form of contract for design services (i.e., lump sum, percentage of construction cost, time and materials, design–build, etc.).	11%
Direct contractual relationship between design disciplines (i.e., architectural, structural, HVAC, electrical, etc., with the owner rather than a single prime contract).	12%
Design team's failure to understand the goal(s) of the owner.	25%
Use of electronic communications.	2%
Decline of face-to-face communication.	27%
Demand for increasing speed of project delivery.	54%
Owner not clear in communicating goals to the design team.	17%
Owner unable to provide timely decisions to the design team.	19%
Owner unable to adhere to previous decisions requiring multiple revisions by the design and construction team.	22%
Owner not communicating requirements for the end product to the design and construction team.	12%
New or alternative delivery systems.	2%
Declining skill level, experience or knowledge of construction professionals.	31%
Poor coordination within the design team.	47%
Declining skill level, knowledge or experience of design professionals.	41%
Increased complexity of building design.	9%
Increased complexity of building systems.	15%
Increased regulatory and building code requirements.	8%
Increased use of technology in buildings.	3%

13. The owner has a variety of responsibilities during project design and construction that contribute to a successful project. Please rate each of the following statements on a scale from 1 to 5 with 1 being 'insignificant' and 5 being 'critically important'					
	1 Insig-nificant	2	3	4	5 Critically Important
Timely decision-making.	0%	0%	2%	19%	78%
Sufficient pre-planning and site investigation prior to beginning design phases.	0%	2%	2%	47%	48%
Extended planning and regulatory approval schedules.	0%	4%	27%	49%	20%
Clear communication of business goals.	0%	2%	20%	49%	28%
Firm and final decisions avoiding revisions by the design and construction team.	0%	2%	11%	44%	43%
Provision of information in a timely manner.	0%	1%	3%	45%	51%
Accessibility of decision makers to the design team.	0%	0%	9%	49%	42%
Use of project managers or construction managers as intermediaries.	0%	11%	20%	49%	21%
Communication of a clearly defined scope of work.	0%	0%	3%	40%	57%
Clear definition of responsibilities for the design and construction team members.	0%	0%	11%	42%	47%
A single voice representing the owner.	0%	1%	13%	40%	46%
Reasonable budgeting to achieve project goals.	0%	0%	9%	54%	37%
Reasonable scheduling of time for predesign and design in the overall project schedule to achieve project goals.	0%	1%	8%	49%	42%
Reasonable scheduling of time to prepare construction documents reflective of the project's complexity.	0%	0%	9%	49%	42%
Prompt payment of design and construction invoices.	0%	2%	20%	46%	31%

On your most recent project(s) was the time spent in:				
	Shorter than Planned	**As planned**	**Longer than planned**	**Significantly longer than planned**
14. Design	21%	21%	45%	14%
15. Preparation of construction documents	23%	30%	40%	7%
16. Construction activities	9%	40%	42%	9%

17. What changes will most significantly contribute to improving the quality of the project delivery process resulting in a greater number of successful projects? Choose from the following statements the four (4) most significant opportunities for improvement.	**2003 Preliminary Results**
Use of alternative delivery methods.	18%
More effective communications.	58%
More realistic project schedules reflecting specific project conditions.	45%
Better scope definition.	45%
More effective decision-making by owners.	41%
Better selection of design professionals.	19%
Assembling an entire design and construction project team at the beginning of the design process.	53%
Better technical training of design professionals.	18%
Greater level of experience among construction team members.	35%
Thorough project planning during early project phases.	70%

18. Based upon your most recent project(s), were the construction documents presented at the beginning of construction.	**2003 Preliminary Results**
Excellent with no information needed	2%
Adequate with little information needed	41%
Sufficient with significant information needed	45%
Insufficient with major information needed	9%
Inadequate with major information not provided	3%

V. Other Items

19. This asks you to evaluate project delivery methods and their effect on quality of construction documents. For each of the primary methods below, rate the relative quality of construction documents delivered on a scale from 1 to 5 with 1 being 'poor' and 5 being 'excellent.'					
	1 Poor	2	3	4	5 Excellent
Traditional design-bid-build.	2%	12%	30%	47%	8%
Contractor led design-build.	4%	25%	33%	35%	4%
Designer led design-build.	1%	20%	51%	23%	5%
Construction Manager at Risk.	2%	5%	40%	45%	8%
Multiple Prime Contractors.	10%	32%	40%	16%	2%
Fast track construction.	10%	38%	42%	11%	0%

20. There continues to be a lack of clarity in the definition of the key roles in the construction process. Please read each statement below and rate each on a scale of 1 to 5 with 1 being 'insignificant' and 5 being 'critically important.'						
	Year	1 Insig-nificant	2	3	4	5 Critically Important
Different delivery systems impact traditional roles.	**2003**	2%	2%	32%	45%	19%
	2002	4%	16%	33%	30%	17%
Ambiguity of roles in the construction phase.	**2003**	2%	11%	27%	43%	16%
	2002	4%	21%	25%	29%	20%
Provide a matrix to clarify the roles in an effort to improve communications.	**2003**	1%	9%	16%	49%	25%
	2002	4%	18%	21%	38%	18%
The use of specialized contracts for consultants.	**2003**	2%	15%	40%	34%	9%
	2002	4%	30%	30%	25%	10%
Confusion of terms for project roles (AIA, AGC, and CMAA)—A need for commonality of terms.	**2003**	7%	12%	30%	33%	19%
	2002	6%	33%	34%	15%	13%

21. Please rate each of the following statements regarding the value of professional certification of construction managers to owners on a scale of 1 to 5 with 1 being 'strongly agree' and 5 being 'strongly disagree.'						
	Year	**1 Strongly Agree**	**2**	**3**	**4**	**5 Strongly Disagree**
Documentation of experience and knowledge.	**2003**	13%	41%	16%	18%	11%
	2002	69%	25%	3%	2%	N/A
Increased awareness of professionalism in a key role in the construction process.	**2003**	13%	40%	18%	17%	11%
	2002	58%	33%	7%	2%	N/A
Recognition of the CM profession.	**2003**	12%	38%	22%	16%	12%
	2002	43%	39%	14%	5%	N/A
A standard for measuring competency and proficiency.	**2003**	15%	36%	25%	8%	15%
	2002	42%	47%	5%	7%	N/A
Aids in the evaluation of qualified personnel for projects.	**2003**	13%	37%	24%	19%	7%
	2002	45%	38%	11%	3%	N/A

22. Please select the phrases that indicate the 4 most significant things you are being asked to do differently today versus five years ago by your senior executives.	2003 Preliminary Results	2002 Preliminary Results
Emphasis on budget and on-time completion.	55%	61%
The use of delivery methods to get the best results versus hard bid.	49%	48%
Delivering quality projects.	42%	36%
Building public projects on an ROI process (go/no go decision on projects based on ROI).	20%	16%
Design and suitability for use—efficient facility operations.	38%	43%
Operating costs versus first cost.	49%	40%
Planning for expansion and upgrades.	32%	33%
Keeping commitments to our customers on schedule and turnover.	55%	56%
Other, Please Specify	16%	13%

23. Please rate each of the following roadblocks to building collaborative teams to complete construction problems on a scale of 1 to 5 with 1 being 'insignificant' and 5 being 'critically important.'						
	Year	**1 Insig-nificant**	**2**	**3**	**4**	**5 Critically Important**
Shared Mission and Goals.'	**2003**	3%	7%	21%	39%	30%
	2002	2%	6%	12%	25%	54%
Agree on the risk sharing formula; i.e., site safety.	**2003**	1%	4%	35%	42%	18%
	2002	1%	4%	21%	45%	25%
Establish trust and respect to foster collaboration.	**2003**	1%	0%	14%	35%	50%
	2002	1%	3%	1%	25%	69%
Open sharing of information.	**2003**	1%	0%	9%	43%	47%
	2002	1%	1%	7%	29%	61%
Low bid contracts impact on trust.	**2003**	2%	10%	37%	33%	18%
	2002	1%	19%	26%	30%	24%
Owner controlled wrap-up insurance.	**2003**	14%	18%	46%	19%	3%
	2002	8%	19%	42%	18%	9%
Insurance/bonds/legal relationships.	**2003**	3%	13%	47%	30%	7%
	2002	4%	8%	37%	30%	17%
Tie A/E errors and omissions into contracts.	**2003**	0%	3%	28%	47%	22%
	2002	3%	4%	15%	42%	36%
The various roles of leadership.	**2003**	1%	1%	20%	47%	31%
	2002	0%	6%	16%	36%	42%
Multiple faces of the owner on the project team (Who does the contractor report to?).	**2003**	1%	5%	16%	42%	35%
	2002	3%	7%	13%	31%	45%
On-site architect creates better projects.	**2002**	8%	13%	41%	19%	20%
	2003	12%	7%	30%	38%	11%
Include the critical components of the team for collaboration; (i.e., on-site designer).	**2002**	2%	7%	38%	33%	20%
	2003	0%	12%	15%	51%	21%

24. Please rate the following issues or challenges that you will face five and ten years from now on a scale of 1 to 5 with 1 being 'insignificant' and 5 being 'critically important.'						
	Year	**1 Insig-nificant**	**2**	**3**	**4**	**5 Critically Important**
Fewer people' to conduct critical programs.	**2003**	1%	2%	24%	45%	28%
	2002	2%	9%	31%	57%	N/A
Dependence on outside expertise.	**2003**	2%	1%	17%	55%	25%
	2002	1%	11%	43%	45%	N/A
Lower core competencies.	**2003**	0%	13%	24%	35%	28%
	2002	0%	17%	43%	39%	N/A
The significant and continuing increase in outsourcing.	**2003**	1%	6%	24%	49%	20%
	2002	0%	26%	44%	30%	N/A
Comoditization of professional services (low price versus expertise); (i.e., medical profession).	**2003**	2%	9%	32%	38%	19%
	2002	0%	26%	44%	30%	N/A
Are owners willing to partner with their service providers and contribute towards a professional apprentice program for A/Es and CMs?	**2003**	3%	9%	33%	35%	19%
	2002	3%	24%	52%	20%	N/A
What is the trend of architects and engineers graduating from college?	**2003**	1%	7%	35%	41%	16%
	2002	3%	13%	54%	28%	N/A